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Agricultural Situation

RUSSIAN AGRICULTURE STUCK IN BUREAUCRATIC MUD?

Most Americans are at least curious about what goes on behind the Iron Curtain. And farmpeople are no exception—particularly since U.S.S.R. farm conditions during the past few years have created a market for U.S. wheat. A glimpse behind the curtain is offered by a recent study of Russian agricultural output since 1953.

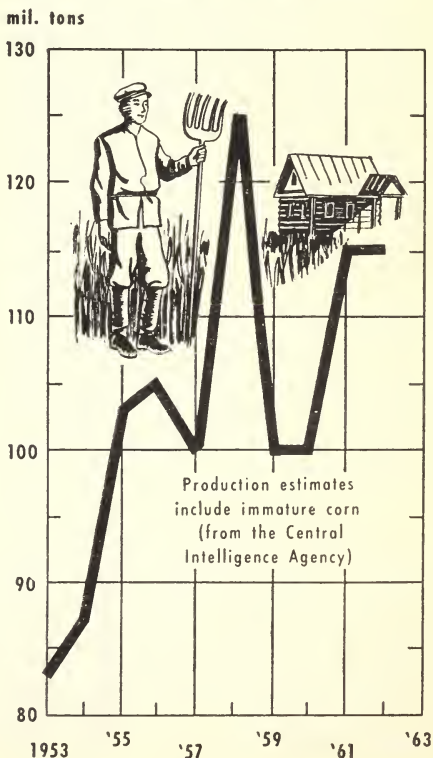
Such a study is significant at this time because 1966 is a potential turning point in Russian agricultural development. Production has stagnated for 7 years, much wheat is being imported, Khrushchev is out of the picture, agricultural policy has shifted, and a new U.S.S.R. farm program is in the works.

Whether 1966 will mark a big change depends largely on how well the new program works. This in turn will determine whether past production trends continue or change in the future.

In any case, it's hard to say how much confidence should be put on the figures available about Russian agriculture. USDA estimates of U.S.S.R. conditions are necessarily based on sketchy information.

Nevertheless, it's clear that the Soviets have had a hard time keeping their people fed and clothed. The urban population in Russia has increased

SOVIET GRAIN OUTPUT
1957-62 av. 107.5 mil. tons



rapidly since 1959. Although these people eat less grain than rural residents, they still use large quantities. And they haven't had enough potatoes, meat, and vegetables to replace part of the grain in their diets.

After 1957, the transfer of capital, labor, land, machinery, and fertilizer into Russian agriculture shifted down into low gear. The development of new lands in the U.S.S.R. was the main reason for increased wheat production from 1953 to 1958; yields changed little. But the new lands now have been exploited beyond their longrun production capacity.

In addition, a corn program was pushed in 1953-58, although it took land needed for wheat and other food crops. The policy of increasing livestock numbers was emphasized, even though feed supplies were limited. And the use of science in agriculture was stifled.

In 1962 the tide began to turn a little. Use of capital, machinery, and fertilizer increased, meat prices were raised, and some costs reduced. But many undesirable features of Russian farm policy continued—the downgrading of oats, grasses, and fallow, considerable party interference in agriculture, and unrelenting high quotas on production.

In March 1965, a new program was announced. Some of the features were a program to provide more fertilizer, increased investment, faster delivery of machinery and parts, higher prices for milk. Also there were more liberal private agricultural policies, such as providing financing for livestock purchases for individuals and allowing them to get feed. In addition, most quotas for farm products were cut back to more realistic levels.

Soviet farm records since 1953 stack up well against the progress in most other countries. However, in terms of the goals they set for themselves, and in terms of their needs for farm commodities, they have fallen far short. The impact of the 1963 crop failure on the Soviet economy, bread supply, livestock production, and farm imports indicated to the free world the precariousness of the U.S.S.R.'s situation during 1961-64.

From 1953 through 1958, Russian farm output rose very rapidly, perhaps 40 to 50 percent, according to the Soviet index of gross agricultural output and other such indexes. But from 1958 on, farm output more or less stayed put. Although the Soviets had *planned* on a net rise of 70 percent, the current situation suggests that the 7 year plan (1958-64) ended with gross production about even with 1958. (However, the weather was very favorable in 1958 which makes it a very poor year for comparison.)

Paradoxically, grain output, after sparking gross production in 1953-58, lagged the most during 1958-64. This caused the U.S.S.R., previously a major exporter of grain, to become a leading importer. Russian grain imports (largely wheat) were about 11 million tons in 1963-64, 3 million in 1964-65, and over 9 million in 1965-66.

All in all, the U.S.S.R.'s system of socialized agriculture is unlikely to be altered much in the near future. But Russia's leaders apparently now have a clearer picture of the problems. And they are likely to continue existing programs to increase production, at least until reasonable results are obtained.

Harry E. Walters
Economic Research Service

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WORLD FOOD NEEDS

Defining the Food Gap

The "haves"—and the "have-nots." The one-third of the world's population with adequate diets versus the two-thirds without them. That's what the economists call the "food gap."

The diet-deficit areas include all of Asia except Japan and Israel, all but the southern tip of Africa, the northern part of South America, and almost all of Central America and the Caribbean nations. In 1959-61, the diet of the people in these areas averaged 900 calories per day below the level of the one-third of the world's population with adequate diets. And the inadequate diets were 300 calories under the nutritional standard for their areas. The daily intake of protein in the diet-deficit regions was less than two-thirds of the level in the well-fed countries; fat consumption was less than one-third.

Figures like these make the world food situation seem hopeless. But economists do expect some progress in improving the diets of the hungry peoples of the world during this decade. By 1970, the calorie level in diet-deficit areas is expected to be 8 percent above 1959-61. Consumption of protein is expected to rise 10 percent and fat, 16 percent. This indicated an improvement both in quantity and in quality of food per person.

But the grain in calories will not be enough to close the food gap. A deficit equivalent to 54 million metric tons of grain will still exist. The deficit in animal protein is likely to be the equivalent of 6½ million tons of nonfat dry milk. Over 3 million tons of soygrits would be needed to fill the pulse and other protein shortage. The fat deficit probably will require some 3 million tons of vegetable oil.

The total cost of the food deficit in 1970 is estimated as \$6.8 billion. Countries in the Far East account for about 93 percent of the total; Communist Asia alone is responsible for 62 percent. Thus, the free world's share is \$2.5 billion.

Family income in the United States has little effect on calorie consumption, even for very low income groups. But

in the underdeveloped nations, income levels play very important roles in calorie intake. In India, for example, the variation in diets of different classes is as large or larger than the difference between India's diets and those of other countries.

The basic problem of diet-deficit countries is productivity. The people cannot produce enough food for themselves or enough other products to trade for food. Per capita incomes are very, very low (\$97 in 1959-61 compared with more than \$1,000 in diet-adequate nations). Any income improvement in deficit countries results in an immediate rise in food demand. In addition, the less-developed countries are mostly densely populated and have high birth rates. Their populations are growing 2.1 percent annually compared with 1.3 percent in the adequately fed areas.

How can these countries begin to fill their food gaps? Diets could be improved almost immediately by a number of new protein-rich food products now in the experimental stage. These mixtures—made of groundnuts, cottonseed, soybeans, fish, and other high-protein foods—are especially valuable in fighting malnutrition among children. Improvements in food storage and preparation, and in the use of additives—vitamins and amino acids—would also help.

In the long-run, however, gains in food production and in trade will be the important factors. Since most of the less-developed nations are pressed for land, food yields must be raised. Use of more fertilizer, in combination with irrigation in some areas, will be the most important single influence. Better education and more farm capital will be needed, too.

By and large, the less-developed nations will have to fill their food gaps from within. But food trade and aid will continue to help. During 1959-61, the less-developed nations imported \$3.2 billion worth of food; nearly a third came from the United States under aid programs.

Quentin M. West
Economic Research Service

Sheep on Feed a Little Higher

The number of sheep and lambs on feed (for slaughter market) in 26 States on January 1, was up 1 percent from a year earlier, according to the Crop Reporting Board. This year's number on feed is estimated at 3,335,000.

Range and pasture conditions in most areas provided ample supplies of feed during the fall. Generally mild weather lasted through mid-December, so the need for supplemental feed was below normal. Wheat pastures in the southern and central plains provided more forage than last year, but growth was held back by dry weather in November. Farm stocks of feed grains on January 1 were 12 percent above the previous year and 3 percent above average.

Prices for feeder lambs have been above year-earlier levels for several months. During the week ended January 1, 1966, the Denver market for choice feeder lambs averaged \$26.15 per 100 pounds, up \$6.40 from a year earlier.

There were 1,746,000 sheep and lambs on feed in the North Central States on January 1. This was a decline of 4 percent from a year earlier. Kansas showed a sharp gain of 34 percent due to improved wheat pastures. Numbers in Indiana, Illinois, and Minnesota were unchanged. All other Corn Belt States reported smaller numbers.

Sheep and lambs on feed in the Western States totaled 1,442,000 head on January 1, up 10 percent from last year. Six States showed increases; 5 had declines.

CATTLE ON FEED UP 5 PERCENT

Cattle and calves on feed for slaughter market in 39 States totaled 9,963,000 head as of January 1, an increase of 5 percent from a year earlier. The 32 major feeding States had 9,820,000 on feed, up 5 percent.

Four percent more cattle and calves were on feed January 1 in the North Central States. The regional total was 6,088,000 head. Iowa, the leading State, was down 7 percent, while Nebraska, the second ranking State, was up 19 percent. All other States in this region, except North Dakota, showed gains over a year earlier.

In the 11 Western States, cattle on feed totaled 2,672,000 head on January 1, up 7 percent. California, leading western feeding State, was up 4 percent and Colorado, in second place, was up 12 percent. The number on feed in the State of Washington was down 4 percent but all other Western States had gains.

The number of cattle and calves placed on feed in the 32 major States during fourth quarter 1965 was 6,855,000 head, 4 percent above the same period in 1964. Placements were 1 percent larger in the North Central States and 8 percent greater in the western region. Shipments of stockers and feeders into

the Corn Belt during October and November were up 2 percent from the same months in 1964.

A weight breakdown of the cattle on feed in the 32 States shows a 7-percent gain for those weighing less than 900 pounds, but no change from a year earlier in the number weighing more.

The number on feed less than 3 months in the 32 States was 6,670,000 head, up 4 percent. Those on feed 3-6 months numbered 2,574,000 head, up 5 percent; over 6 months, 576,000 head, up 28 percent.

Marketings of feed cattle for slaughter from the 32 States during October-December totaled 4,409,000 head, 6 percent higher than in fourth quarter 1964. North central marketings were unchanged while those in the western region were up 14 percent.

Cattle feeders in the 32 States intend to market 4,514,000 head during January-March. This would be 4 percent above the same period in 1965.

Feeders in the North Central States plan 4 percent more marketings this January-March than a year ago. Marketing intentions in the western region are up 5 percent.

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STUDIES OF FARM MIGRANTS

Often Contrary to Popular Belief

A farmer and his family are calling it quits; they are moving to the city to try their luck. Will the family consider itself better off because of the move?

Generally, the answer is yes. This conclusion comes from a review of several USDA and related research findings. Naturally, as the studies admit, results are taken from samplings and are open to many qualifications and exceptions.

However, several points that may be contrary to popular belief stand out. Two examples from the studies should help clear the air:

—Farm-reared people go to cities to get work, not welfare checks. In a recent study of farm-reared migrants to Des Moines, 88 percent gave economic reasons—better jobs or higher paying employment—for moving. This was a higher percentage, incidentally, than found for people moving to Des Moines from other urban areas. Much the same pattern emerged from a similar study of migrants to Wilmington, Del.

—When they first arrive, farm-reared people often have contacts in the city; many of them should not be classified as friendless and alone. Almost half the farm migrants to Des Moines had relatives already living there when they moved. A study of farm-reared migrants to Indianapolis showed that the newcomers relied heavily on friends and relatives for job information. Personal ties with city people undoubtedly reflect the fact that most farm-born adults, nationally, have left the farm, but have stayed in the geographic region of their birth. Less than a fourth have left their home regions.

How do job prospects for the newcomers stack up? Available information is sketchy, but some studies reveal pertinent factors:

—The farm-reared migrant's education is likely to be inferior to the schooling received by city people. This is a most important aspect, influencing his present and future chances for jobs, his social standing in the community, and his outlook for himself and his

family. In a national sample, 60 percent of the farm-reared city residents had only grade-school educations compared with 27 percent for those reared in urban areas. Only 9 percent of the farm-reared people had some college education compared with 19 percent for the others.

—Thus, the first job opportunity for the man from the farm is likely to be in a blue-collar or service occupation. In a survey of Kansas employment of office managers, for example, most of them thought farmers (or farm-reared migrants) were best suited for construction labor, machine shop and mechanical work, factory jobs, and employment in retail and wholesale trades.

Crop Value\$

What was the most valuable crop during 1965? If you guess corn, you're right. The value of the 1965 crop was over \$4.5 billion, up from \$4.1 billion the previous year.

The hay crop topped out at \$2.9 billion, also up from 1964 when it was worth over \$2.7 billion.

Next most valuable crop: Cotton. Cotton lint was valued at nearly \$2.2 billion, compared with about \$2.3 billion in 1964.

Soybean (for beans) are next in line, at \$2 billion in 1965. In 1964, they were valued at \$1.8 billion.

In fifth place, wheat came close to \$1.8 billion. The crop in 1964 was valued at slightly less.

Among the fruits, oranges were easily the most valuable—\$406 million in 1965, \$379 million in 1964. Pecans were the leading nut crop in value, worth nearly \$45 million last season compared with \$39 million a year earlier, when they ran third after almonds and walnuts.

The value of 78 crops totaled \$21.8 billion in 1965, compared with \$21.0 billion a year earlier.

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'LIQUID CORN' IN NEW FORM

You may not be aware of the gain in corn oil's popularity and prices of late, but your wife probably is. In the supermarket or grocery she likely has noticed several brands of salad oil and margarine made with 100 percent corn oil. During the 1964-65 marketing year, more than nine-tenths of the corn oil used in this country was sold as salad and cooking oil or in margarine.

Thanks to the rapid rise in food use, corn oil prices have doubled within the past 2 years. The monthly average (crude basis, Decatur, Ill.) went from 10 cents a pound in January 1964 to about 20 cents in January 1966. Prices now are the highest since November 1961. They are expected to remain at high levels throughout 1966.

Corn oil is a byproduct of the corn milling and distilling industries. It is produced by: "Dry" millers who make breakfast foods, cornmeal, hominy, grits, flour, and feed; "wet" millers, or corn refiners, who manufacture starch, sirup, sugar, and feed; and distillers who make industrial alcohol and feed, in addition to whisky.

Wet milling produces the largest volume of oil—around 85 percent of the total supply in recent years. The amount

of corn ground by wet millers rose from a postwar low of 110 million bushels in calendar 1948 to an estimated record of 205 million in 1965. The oil output (based on calendar year shipments) went from 178 million pounds in 1948 to 370 million estimated for 1965.

Corn oil supplies for the 1965-66 marketing year are estimated at a record 500 million pounds. In 1947-48, they were 217 million pounds.

Corn oil consumption has kept pace with the gain in supplies. Use this marketing year is expected to reach a new high of 475 million pounds. Imports have been very small and were nil during 1964-65.

Corn oil must be refined before it is used for food. Its special qualities—low cloud and melting points, relatively high smoking point, and good keeping ability—make it popular as a cooking and salad oil. It also is used in mayonnaise, salad dressing, shortening, and of course, margarine. Potato chip processors and bakers use sizeable amounts for deep-fat frying, too.

Nonfood uses are small; they include the manufacture of soap, insecticides, and leather and textile products.

Rice Exports Reduce Carryover

During the past 3 years, the U.S. rice supply and disappearance pattern has been one of rising production matched by increasing exports. This is likely to be the case again during the 1965-66 marketing year (August-July).

The 1965 crop totaled a record 76.9 million hundredweight, up nearly 4 million from a year earlier. Exports are expected to top the record 42.5 million cwt. (rough basis) in 1964-65, with commercial shipments accounting for most of the gain. Commercial rice exports in 1964-65 totaled around 25 million cwt., continuing the sharp uptrend of recent years. Domestic disappearance in 1965-66 is expected to be up slightly from the 31 million cwt. a year earlier.

The beginning carryover on August 1, 1965, was 7.7 million cwt. The 1965-

66 carryover is also likely to be relatively low.

Production of medium-grain rice last season was down slightly from 1964 but still accounted for nearly half the total crop. Long-grain output was up substantially from 1964.

The 1965-66 season-average price received by growers was estimated in December at \$4.90 per cwt., the same as the season before. With the 1965-66 loan rate as \$4.50 per cwt., prices are stronger relative to loan than they have been since 1959-60.

The 1965-66 world rice crop, excluding Communist Asia, is expected to be around 3 percent below the year-earlier record. Yields are above average, but down from the high 1964-65 level; supplies for export likely are lower.

Seed Crops

Some farmers spend their time producing products used largely by other farmers. Seed growers make a good example.

During 1965, growers harvested over 2.4 million acres of 16 different kinds of field and lawn seeds. These crops were worth nearly \$104 million. The 16 crops were alfalfa, red clover, sweet-clover, white clover, ladino clover, lespedeza, timothy, orchardgrass, Merion Ky. bluegrass, chewings fescue, red fescue, tall fescue, bentgrass, crimson clover, hairy vetch, and ryegrass.

Ryegrass is the largest seed crop produced. Production in 1965 totaled 152,755,000 pounds, down from 192,570,000 the previous year.

Alfalfa is next. Output during 1965 is estimated at 122,642,000 pounds, down from 140,897,000 in 1964.

Production of lespedeza was 70,805,000 pounds last year, well above the 55,620,000 in 1964. Red clover output came to 63,832,000 pounds, down from 77,733,000 in 1964, and the tall fescue crop produced 46,277,000 pounds of seed, also down from 1964.

In addition to supplying farmers' seed needs in the United States, seed growers export sizable amounts. Last year, 9,262,000 pounds of alfalfa, 7,187,000 pounds of bentgrass, 4,816,000 pounds of timothy, and 2,570,000 pounds of ladino clover were exported.

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USE OF CIGARETTES GAINING . . . Tobacco Supplies Somewhat Lower

Cigarette consumption and output reached new highs last year. U.S. smokers (including those overseas) used an estimated 532 billion—up 4 percent from 1964 and 1½ percent above the previous high in 1963. This year, cigarette consumption is likely to keep gaining gradually as the population in the smoking-age brackets increases.

Total output of cigarettes last year is estimated at 561 billion, compared with 540 billion in 1964 and 551 billion in 1963. Exports, including shipments to Puerto Rico and other U.S. island possessions, accounted for about 5 percent of total output. The United States is the world's leading exporter of cigarettes; the United Kingdom is second.

Cigarette prices to consumers in 23 States rose last year because of boosts in State cigarette tax rates. The weighted average rise in the cigarette tax of these States was about 3 cents per package of 20—a jump of 55 percent over the previous average. In effect, these tax increases raised cigarette prices by about 10 percent.

FLUE-CURED

The 1965-66 supply of flue-cured tobacco—the leading cigarette and export tobacco—is down 4 percent from the record 1964-65 level. The substantial cut in 1965 production more than offset the rise to a record high carryover in mid-1965. Carryover by mid-1966 will show a sizable decline. The quality of 1965 marketings was considerably higher than in previous years, and prices received by growers averaged more than a tenth higher than in 1964.

BURLEY

The 1965-66 supply of burley tobacco—the second ranking cigarette tobacco—is a little below the previous year's record. Production declined in 1965, but by less than the 9½-percent cut in acreage. Reason: 1965 yields averaged second highest on record. The carryover last October 1 was record high. By the third week of January, marketings were virtually completed. Prices to growers averaged near 67 cents a pound—about 11 percent above the previous year and highest on record.



Based on Information Available February 10, 1966

SOYBEAN PRICES

Soybean prices (No. 1 yellow, Chicago) have advanced from a seasonal low of \$2.49 per bushel in October 1965 to \$2.84 in January 1966, reflecting record crushings and exports and a buildup in farm storage stocks from the 1965 crop. The Chicago price in September-January averaged \$2.64 per bushel, compared with \$2.82 during the same months a year ago when supplies were smaller. Soybean prices at central markets are expected to continue strong in 1966.

BROILER PICTURE

Demand for broilers is expected to continue strong in 1966, especially through the first half of the year, as the general economic growth continues and exports rise further. Prices are likely to average higher than in January-June 1965. However, in the second half, broilers will face stiffer competition than last year from increasing supplies of red meat (especially pork) and turkeys. Pork production is expected to begin increasing after midyear. If broiler production continues to run 10 to 15 percent above a year earlier, second-half prices likely will average lower.

COTTON CONSUMPTION AND EXPORTS

Prospects for U.S. mill consumption of cotton during the current marketing year (August-July) have strengthened in recent months. Consumption this year is now expected to total about 9½ million bales (9.3 million of upland cotton). This is up from 1964-65 consumption of 9.2 million bales. Indicators supporting this higher consumption include the increasing rate of cotton use in recent months and a relatively low level of mill stocks in relation to unfilled orders for cotton cloth. Contributing influences are the expansion in general economic activity, the high level of

COTTON CONSUMPTION AND EXPORTS—Continued

consumer demand for textiles, and increasing textile use by U.S. military forces. In contrast, prospects for cotton exports during the 1965-66 crop year have weakened recently. It now appears that shipments may be about 3½ million bales, down from 4.1 million in 1964-65. The prospective decline reflects primarily a working down of cotton stocks in foreign free world countries, largely because of uncertainty regarding world market prices during the 1966-67 crop year. Production and consumption of cotton in foreign free world countries are expected to change little this year from last.

POTATO SUPPLIES

Potato supplies are up sharply from the low level of a year earlier. February 1 stocks amounted to 96.3 million cwt., 31 percent more than in 1965, and record large. Heavier new crop supplies also are indicated. The 1966 winter crop is up 40 percent from last year, and intentions reports point to more acreage for spring harvest. Although total supplies are heavy relative to trade needs, prices in midwinter remained above average. A good movement to processors, together with indications of above normal shrink, tended to sustain markets.

MARKETING COSTS

The farm-retail spread for the "market-basket" of farm-originated foods declined 1 percent in 1965, the first reduction since 1950. Most of the cut was due to reductions in spreads for meat products during the spring and fall months, when prices of meat animals were rising. (Farm-retail spreads for meat products often decline when meat animal prices go up rapidly.) Spreads also dropped moderately for most dairy products, eggs, several fruits and vegetables, and sugar. In 1965, the farmer received an average of 39 cents of the consumer's farm food dollar, 2 cents more than in 1964. This is the first gain in the farmer's share since 1960 and the largest rise since 1951.

Farm Numbers

The number of farms in operation during 1965 declined in 47 States and remained unchanged in 3 States, bringing the national total to 3,380,000—3 percent under 1964.

Total land in farms, at 1,155,000 acres, declined less than half of 1 percent from 1964.

During 1966, farm numbers are expected to decline further, continuing the downward trend of some years. As of January 1, 1966, the number is estimated at 3,286,000.

The decline in total land in farms

also is expected to continue at practically the same rate as before. The preliminary estimate for 1966 is 1,151,000 acres.

Because the number of farms has declined at a faster rate than the land in farms, the average farm size has risen rapidly. The "average farm operator" in 1966 manages a farm unit of 350 acres—a fifth larger than 7 years earlier, and up 8 acres from 1965.

The State with the largest number of farms is Texas (196,000)—also has the largest area in farmland (154 million acres).

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MORE BROILER CHICKS HATCHED

Hatcheries produced 236.3 million chicks during December 1965 compared with 210.8 million during December 1964. The hatch of broiler-type chicks totaled 209.4 million, up 13 percent from a year earlier and the largest of record for the month.

During 1965, there were, 2,500 million broiler-type chicks hatched, 8 percent more than in 1964 and the largest yearly output of record. Broiler-type chicks in incubators on January 1 were up 13 percent from the number on January 1, 1965.

Egg-type chicks hatched in December 1965 are estimated at 26.9 million, a gain of 7 percent from a year earlier. The hatch of egg-type chicks during 1965 totaled 491.9 million, 7 percent fewer than in 1964. The number of egg-type eggs in incubators on January 1 was 18 percent above a year ago.

POULT PRODUCTION

Poults of all breeds produced during

December totaled nearly 3 million up 47 percent from December 1964.

Heavy-breed poults hatched in December totaled over 2.1 million, an increase of 52 percent from a year earlier. The hatch of heavy whites, at 1.6 million, was up 51 percent; other heavy breeds, at 513,000, were up 54 percent.

The number of light-breed poults hatched, at 858,000, was 35 percent larger.

Poults of all breeds produced during 1965 totaled 114.8 million, up 6 percent from 1964. The hatch of heavy whites during the year was close to 51.8 million, a gain of 24 percent. Other heavy breeds, at 49.6 million, declined 7 percent. Light breeds totaled 13.4 million, up 3 percent.

The number of heavy-breed eggs in incubators on January 1 was 72 percent larger than the January 1, 1965, figure. The number of light-breed eggs in incubators January 1 was up 49 percent.

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"Average" Doesn't Apply to Most Farms

Looking for the typical farm? You'll probably never find it. They come in all varieties.

Some are highly productive; others turn out very little. Many produce a single type of product; others have several enterprises. Some may take up a vast amount of land; others only a fraction of an acre. Some have assets of \$10 million or more; others, less than \$10,000. Some are operated by highly skilled farmers; others by persons just the opposite.

So, how do you go about looking for a farm that is successful and likely to continue that way? One of the best guides is gross sales.

Grouping all the farms in the United States on this basis, less than half produce nine-tenths of the farm products. This is the commercial part of agriculture.

There were fewer farms in the commercial sector in 1964 (when the latest census of agriculture was taken) than at any other time in the 20th century. However, this has been the trend for

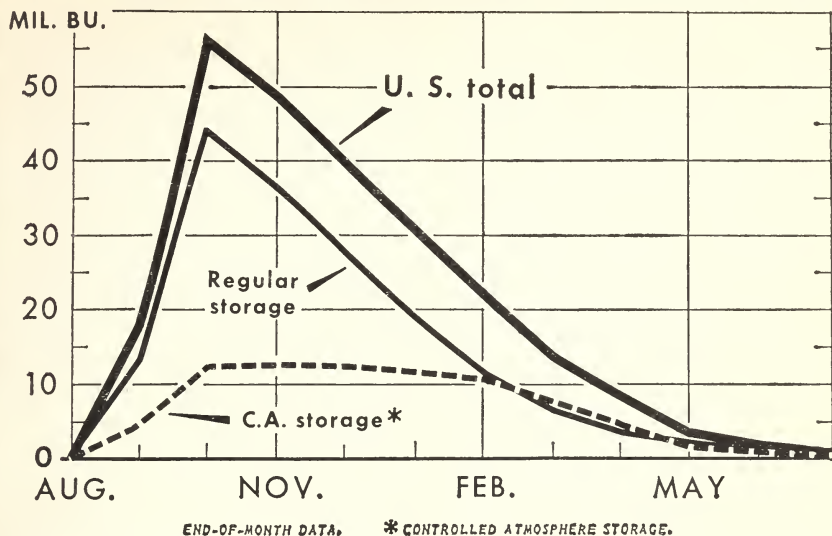
many years. At the same time, the size of commercial farming operations has grown steadily, particularly in the last 5 years. Farms feeding 200 to 400 cattle annually, raising 400 to 600 hogs, or milking 80 or more cows were much more common in 1964 than in 1959.

Bigger in terms of production and gross sales, today's commercial farms also use more purchased inputs—such as fertilizers, machinery, hybrid seeds. They also are much more highly specialized than ever before, producing only one kind of crop or livestock.

But the essential ingredient in the growth of commercial agriculture is still the farmer. The gain in his experience, education, and management ability have been behind all other changes. He is a decisionmaker, a technician, and an analyst.

Increasingly, today's farmer has a college education behind him. A third of the farmers producing \$40,000 or more of farm products for sale during 1964 had been to college; one in eight of those with sales of \$20,000 to \$39,999 had some higher education.

APPLES IN COLD STORAGE, 1964-65



U. S. DEPARTMENT OF AGRICULTURE

NEG. ERS 4168-66 (1) ECONOMIC RESEARCH SERVICE

EXTRA-SPECIAL APPLE TREATMENT

To many folks, "controlled atmosphere" may bring space capsules to mind. Actually it should make them think of the high quality apples they've been getting late in the season. Quite a few growers have recently added controlled atmosphere features to their apple houses—or built new ones incorporating them. As a result, they've been getting premium prices for their fruit in months when apples from ordinary storage are low in quality.

Apples stored in a controlled atmosphere (CA) hold their condition well from fall until the following summer. Under CA storage, the respiration and ripening of apples are reduced by lowering the oxygen content of the air. This process is in addition to the usual artificially cooled temperatures and high relative humidity maintained in cold storage.

Oxygen content in storage rooms can be reduced a couple of ways. The first involves the use of oxygen, and its displacement by carbon dioxide, in the natural respiration of the fruit. The

second method uses commercial generators to produce the proper atmosphere which is then circulated through the storage rooms to replace normal air.

Tests have revealed the best atmospheric combination for storage: Levels of 2 to 3 percent oxygen and 1 to 7 percent carbon dioxide; temperatures of 30° to 38° (depending on the apple variety); and 95 percent relative humidity. CA storage has proven particularly successful with McIntosh apples, normally difficult to hold under 38°.

Since 1963, the *Cold Storage Report*, issued monthly by the Crop Reporting Board, has been covering data on apples in CA storage. As of October 1, 1963, storage plants reported CA rooms with a capacity of over 11 million bushels. This was 12 percent of the total usable space in apple houses. On November 30, 1965, over 12 million bushels of apples were reported in CA storage. The current estimate of capacity is slightly over 13 million bushels.

Ben H. Pubols
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On California Cotton Farms . . .

COSTS LOWEST AT HIGH INCOMES

"How big should my farm be to get lowest costs?" This is a question uppermost in most farmers' minds nowadays. A recent study in the western part of Fresno County, Calif., should provide some ideas on size of operation and ways to save on costs.

This farming area is characterized by two general soil types—light sand and heavy clay and clay loam. The study showed most of the cost savings for the light soil farms were obtained when gross income was around \$140,000. An operation of 600 to 800 acres would be needed.

On the heavy soils, costs were lowest when gross income was about \$275,000. Such an operation would require 1,200 to 1,400 acres. However, most of the costs were lowest when gross income was pegged around \$150,000 (640 acres farmed).

Machinery is a major cost for most farmers, and Fresno County operators are no exception. The study showed costs per dollar of gross income on the light-soil farms would be lowest when

the operator uses a one-row cotton-picker, a pull-type baler plus a swatcher, and custom-hiring arrangements to harvest small grains. However, light-soil farms of at least 300 acres could profitably use a two-row picker and a field hay waferer. With 640 acres or more, a self-propelled baler without the waferer would cost the least.

Small farms with heavy soils would save by using custom harvesting for all crops. With at least 90 acres in cotton, the operator could economically use a one-row picker. With at least 160 acres, a two-row picker would be the least expensive. Farms with 1,200 or more acres could feasibly afford a self-propelled combine.

Irrigation is another important cost for Fresno County farmers. Least-cost systems on the light soil operations were made up of underground concrete pipelines and quarter-mile lengths of run between laterals, but no water return. Heavy soil farms need the return system because of higher water costs in their area.

We Know How It Is . . .

When the days start getting longer, when the sun shines and the temperature rises, there's a hint of thaw about—even if the wind still has a sharp edge to it. It's time to think of overhauling the tractor and figuring how much seed corn to buy.

It's also an important time of year for the Crop Reporting Board. As spring planting plans begin to take shape, the statisticians ready themselves for another busy season.

One of their first major jobs is to prepare the March prospective plantings report. More than 300,000 buff-colored cards will be sent to crop and livestock reporters in all 50 States. These cards ask the acreage planned for major crops

this year and the harvested acreage in 1965.

The information collected is compiled into State and National reports—the first indication of what the acreage of important crops will be in the current year. Released March 18 this year, such estimates often help producers decide what changes to make in their plans just prior to planting.

Obviously, the statisticians appreciate the past efforts of the thousands of crop reporters who have responded to this and many other surveys. But still, there's no time like the present. That's why it's particularly important now to fill out and mail *your* card. The folks at SRS say "thanks" in advance for doing so.

105 Acres Needed for \$5,000 Income

With all the emphasis on "big farming," a lot of small operators are wondering how they can stay in business and earn a reasonable income. Researchers in Alabama made a study of the wiregrass area in the southern part of the State to show how much open land is needed to make \$5,000 annually. Here are the results:

—The minimum open land required to return \$5,000 in operator-labor income ranged from 105 acres to 192 acres, depending on the enterprise chosen and the interest charged for land. (More than 75 percent of the farms in the wiregrass area currently have less than 105 acres of open land each. If these

farms were consolidated into 105-acre operations, farm numbers would be reduced at least 43 percent.)

—Cotton and peanuts were the two most profitable crops for the wiregrass area. At prices near or above current levels, the entire allotment for both would be planted. However, cotton was profitable as low as 26 cents a pound.

—At \$16 per cwt. or more, hogs would be the most profitable livestock enterprise. And the farmer would get a higher return on his corn using it for hogs rather than selling it for grain. Beef cows at \$15.50 and steers at \$24 per cwt. could profitably use roughage grown on unplowable land.

FARM FINANCES...GETTING COMPLICATED

With farm asset values becoming ever larger, many farmers are necessarily larger financiers. But one research study shows how farmers handle their money depends a great deal on their age, tenure, and size of operation.

A study was recently completed on the financial dealings of 400 farmers in central Illinois. Nearly all of the farmers interviewed had checking accounts in local banks. Over 90 percent owned life insurance and a large number also owned stocks (mostly in farmer cooperatives). About 47 percent had savings accounts and many held Government bonds, too.

Over 90 percent of the farmers owed some debt. However, the amounts averaged less than 16 percent of their assets. Indebtedness of younger farmers (under 40 years of age) averaged 32 percent of their assets.

As might be expected, the older farmers were generally better off financially than those just starting out, and had more farm and financial assets and less debt. They also were more likely to be full owners. Farmers with large assets held investments in a variety of ways, particularly in additional land, other real estate, loans to others, and stocks and bonds.

Older farmers tended to rely more on cash receipts for operating expenses than on debt as younger farmers did.

And they put a larger share of farm income into financial holdings. Financial assets other than checking accounts were built up primarily with the proceeds from sales of farm assets, such as livestock, machinery, and land.

Tenants, usually younger farmers, had much smaller farm assets and larger debts. As could be expected, their investments in crops, livestock, and machinery were larger in relation to their other assets, than was the case for either full owners or part owners. The dollar value of financial assets of tenants was only slightly less than that of other farmers.

In addition to the necessity of relying more heavily on debt financing than their elders, younger men received less income from nonfarm sources, were more likely to use farm incomes to repay debts, and often invested nonfarm income in farm assets.

By value of farm assets, farmers with large operations were able to put bigger shares of their cash receipts in farm assets. The small operators had a higher proportion invested in livestock and machinery and a higher debt-to-asset ratio—25 percent compared with 13 percent for large operators. The small operators carried insurance with cash value amounting to 6 percent of total assets, which was more than double that of the large operators.

MEET THE STATE STATISTICIAN . . .

JAMES KENDALL



Jim Kendall just can't seem to stay out of Ohio for long. But it's not surprising because he was born in the Buckeye State, went to Ohio State University, entered the Statistical Reporting Service in Columbus, and married an Ohioan. The few times he left Ohio for very long were to serve in the U.S. Navy during World War II and to work for a time in the Illinois and Washington, D.C., SRS offices.

Jim was born in Adams County in 1920. His folks had a general farm then; later they specialized in dairying and tobacco production.

In 1938, Jim left home to enter the College of Agriculture at Ohio State University. Four years later he received his degree in agricultural economics. Then he began working as a graduate assistant for the Ohio Agricultural Experiment Station in the Ohio Crop Reporting Service office. This was his first job in collecting and analyzing agricultural statistics.

In 1942, Jim joined the Navy. He

spent 2 years in the amphibious force in the Mediterranean and in the Atlantic. He was in on landings at Sicily, Salerno, Anzio, and Omaha Beach. Afterward, he spent 2 years teaching midshipmen.

In July 1946, Jim returned to Ohio and his graduate work in agricultural economics. While in grad school, Jim was tapped for membership in Gamma Sigma Delta, the honor society for students in agriculture.

He also picked up where he left off in the Crop Reporting Service. However, things weren't quite the same as when he left. For one thing, a new State agent from Scioto County had started working while he was away. Her name was Betty Adkins—that is, until she added Kendall to it. The Kendalls later signed on a couple of "junior statisticians"—a son and a daughter.

By May 1950, Jim had completed all the required courses for a Ph.D. in agricultural economics. He was assigned full time to the Crop Reporting Service. In 1956, he was transferred to the Illinois office and in 1958 was sent to Washington, D.C. While in Washington, he spent a year in the Crop Reporting Board Secretary's office and 2 years in the Field Crops Branch of Agricultural Estimates.

When Ohio State Statistician Russ Handy's services were requested in Washington in 1961, Jim returned to the Ohio office again.

A State that is becoming highly industrialized, Ohio, still has a very viable agriculture. Enterprises in the State are varied. They range from some tobacco grown in the southern part to fruit orchards along Lake Erie (and elsewhere, too).

Like other States in the Corn Belt, Ohio is an important producer of cattle, and hogs. In many sections, dairying is a major enterprise, and field crops and vegetables are grown throughout the State.

Farm Ads Are
Big Business

Ever notice the big ads urging you to buy more orange juice, eat more beef? They are just a few of the many ads sponsored by some 1,200 agricultural groups in the Nation.

A survey of such groups was made during 1963-64. It showed that they (and 375 additional farm organizations that made contributions to them) had current annual budgets totaling about \$86 million for promoting farm products. And these groups planned to spend \$92 million during the following fiscal or calendar year. A similar survey in 1958 showed that 1,132 groups spent about \$67 million annually.

Over 45 percent of the money used by promotion groups in 1963-64 was for advertising, largely in magazines. The rest was spent on newspaper, television, and radio advertising.

Money for merchandising aids accounted for a fifth of the total budget, with about half of that spent on point-of-purchase promotion. About 17 percent of the total budget went for public relations and consumer education work. Less than 3 percent was used for promotion research—finding out which forms of promotion are most effective in increasing sales.

Compared with 1958 data, the more recent budgets of agricultural promotion groups allowed a larger share for merchandising aids and advertising than for public relations and consumer education. Although still a small part of the total, money for promotion research in 1963-64 was nearly 60 percent above 1958.

Fifty-five percent of the money spent for farm product promotion didn't identify any brands. Programs that mentioned brands were conducted largely by farmer cooperatives. They accounted for 25 percent of the funds. The remainder was spent on promotion for products tied to specific States or other geographic areas.

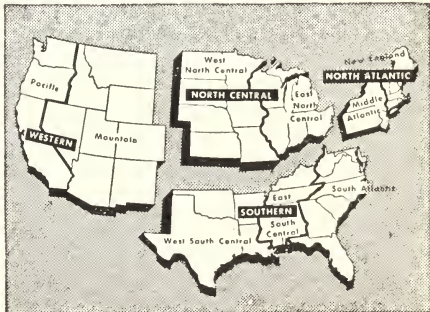
Fruit and dairy products got the lion's share (61 percent) of the promotion funds. Programs promoting meat accounted for 7 percent of the total.

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